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Japanese Patent

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FACSIMILE DEVICE AND ITS DATA TRANSMISSION AND RECEPTION METHOD

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Specification

1. Title of the invention

Facsimile Device and Its Data Transmission and Reception

Method
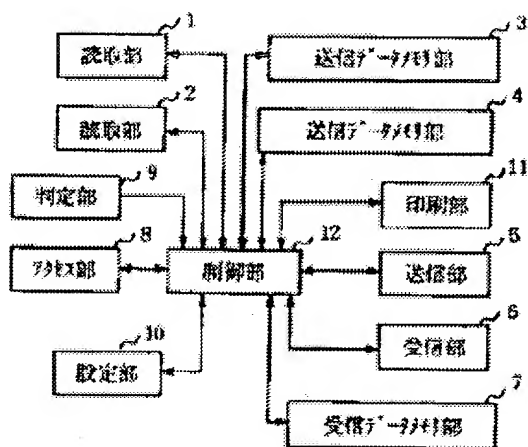
2. Claims   /2

1.   A facsimile device, characterized by the fact that it

is equipped with a first readout part that reads out one surface

of an original, a second readout part that reads out the other

surface of the above-mentioned original, a first transmission

data memory part that temporarily stores the data read out by

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[1] Numbers in the margin indicate pagination in the foreign
text.

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the above-mentioned first readout part, a second transmission

data memory part that temporarily stores the data read out by

the above-mentioned second readout part, a transmission part

that transmits the data to the other party facsimile device, a

reception part that receives the data transmitted from the other

party facsimile device, a received data memory part that

temporarily stores the data received by the above-mentioned

reception part, an access part that confirms whether or not the

other party facsimile device can be accessed, a decision part

that decides the existence of the data in any of both surfaces

and one surface of the original by the operation of the above-

mentioned first and second readout parts, a setup part that sets

the output pattern of the data to any of both surfaces and one

surface, a printing part that prints and outputs the data

received based on the setup of the above-mentioned setup part,

and a control part that controls each of these parts; and the

above-mentioned control part confirms a connectable state of the

above-mentioned access part and the other party facsimile

device, reads out the data in an alternate fashion from the

above-mentioned first and second transmission data memory parts

for each page during the transmission, transmits them to the

other party from the above-mentioned transmission part, reads

out the data from the above-mentioned received data memory part

during the reception, and prints them on the above-mentioned

printing part in a state of any of both surfaces and one surface

based on the instruction of the above-mentioned setup part.

2.   A data transmission and reception method in a

facsimile device, characterized by the fact that in a data

transmission and reception method in a facsimile device, an

original is read out; whether the original has both surfaces or

one surface is decided; if the original has both surfaces, the

original of these both surfaces is simultaneously read out by

two readout means and temporarily stored in each corresponding

memory; if the original has one surface, it is read out by any

of the above-mentioned two readout means and temporarily stored

in the corresponding memory; and after confirming that the other

party facsimile device can be accessed, the data stored in the

above-mentioned memory are sequentially transmitted to the other

party for each page.

3.   A data transmission and reception method in a

facsimile device, characterized by the fact that in a data

transmission and reception method in a facsimile device, after

confirming that the other party facsimile device can be

accessed, data from the other party are temporarily stored in a

received memory; and the data read out of the above-mentioned

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memory are sequentially printed according to the preset printing mode of any of both surfaces and one surface.

3. Detailed explanation of the invention

[0001]

(Technical field of the invention)

The present invention pertains to a facsimile device and its data transmission and reception method.

[0002]

(Prior art)

In conventional facsimile devices, in case an original has both surfaces, when it is transmitted to the other party, the transmission is carried out by dividing into two. In other words, first, only the surface side of the double-faces original is collected and transmitted, and the back face side is then transmitted. Or, one surface of the original with both surfaces is copied in advance, and the entire original is transmitted by one surface. Also, if the original of one surface is erroneously set in the facsimile device, a blank paper having no data is transmitted. Furthermore, when the double-faced original is received, both surfaces are recopied for both surfaces due to the one-surface printing.

[0003]

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(Problems to be solved by the invention)

As a first problem of the above-mentioned conventional facsimile device, when a double-faced original is transmitted to the other party, the original is transmitted by dividing the surface and the back face into two, or after one surface of the double-faced original is copied in advance, the entire original must be transmitted by one surface. The reason for this is that there is no means that can directly transmit the double-faced original.

[0004] Also, as a second problem, if an original with one surface is erroneously set, data of a blank paper are transmitted. The reason for this is that the readout function of only one surface is provided.

[0005] Furthermore, as a third problem, when a double-faced original is transmitted, both surfaces must be copied for both surfaces. The reason for this is that there is no means for printing both surfaces.

[0006] The purpose of the present invention is to provide a facsimile device, which can directly transmit one surface without copying when a double-faced original is transmitted, prevents an erroneous blank paper transmission of an original with one surface, and can optionally select a both-surface or

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one-surface printing in accordance with receiving data, and its

data transmission and reception method.

[0007]

(Means to solve the problems)

The facsimile device of the present invention is equipped

with a first readout part that reads out one surface of an

original, a second readout part that reads out the other surface

of the above-mentioned original, a first transmission data

memory part that temporarily stores the data read out by the

above-mentioned first readout part, a second transmission data

memory part that temporarily stores the data read out by the

above-mentioned second readout part, a transmission part that

transmits the data to the other party facsimile device, a

reception part that receives the data transmitted from the other

party facsimile device, a received data memory part that

temporarily stores the data received by the above-mentioned

reception part, an access part that confirms whether or not the

other party facsimile device can be accessed, a decision part

that decides the existence of the data in any of both surfaces

and one surface of the original by the operation of the above-

mentioned first and second readout parts, a setup part that sets

the output pattern of the data to any of both surfaces and one

surface, a printing part that prints and outputs the data

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received based on the setup of the above-mentioned setup part, and a control part that controls each of these parts. The above-mentioned control part confirms a connectable state of the above-mentioned access part and the other party facsimile device, reads out the data in an alternate fashion from the /3 above-mentioned first and second transmission data memory parts for each page during the transmission, transmits them to the other party from the above-mentioned transmission part, reads out the data from the above-mentioned received data memory part during the reception, and prints them on the above-mentioned printing part in a state of any of both surfaces and one surface based on the instruction of the above-mentioned setup part.

[0008] Also, according to the data transmission and reception method in a facsimile device of the present invention, an original is read out, and whether the original has both surfaces or one surface is decided. If the original has both surfaces, the original of these both surfaces is simultaneously read out by two readout means and temporarily stored in each corresponding memory. If the original has one surface, it is read out by any of the above-mentioned two readout means and temporarily stored in the corresponding memory. After confirming that the other party facsimile device can be

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accessed, the data stored in the above-mentioned memory are sequentially transmitted to the other party for each page.

[0009] Also, according to the data transmission and reception method in a facsimile device of the present invention, after confirming that the other party facsimile device can be accessed, data from the other party are temporarily stored in a received memory, and the data read out of the above-mentioned memory are sequentially printed according to the preset printing mode of any of both surfaces and one surface.

[0010] According to the present invention, the transmission is possible in accordance with the original pattern of both surfaces and one surface, and during the reception, any of the both-surface and one-surface printing modes can be optionally selected as a printing pattern.

[0011]

(Embodiment of the invention)

Next, an embodiment of the present invention is explained referring to the figures.

[0012] In Figure 1, the facsimile device of the present invention is equipped with a readout part 1 that reads out one surface (for example, surface) of an original, a readout part 2 that reads out the other surface (for example, back face) of the original, a transmission data memory part 3 that temporarily

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stores the data read out by the readout part 1, a transmission

data memory part 4 that temporarily stores the data read out by

the readout part 2, a transmission part 5 that transmits the

data to the other party facsimile device, a reception part 6

that receives the data transmitted from the other party

facsimile device, a received data memory part 7 that temporarily

stores the data received by the reception part 6, an access part

8 that confirms whether or not the other party facsimile device

can be accessed, a decision part 9 that decides the existence of

the data in any of both surfaces and one surface of the original

by the operation of the readout parts 1 and 2, a setup part 10

that sets the output pattern of the data to any of both surfaces

and one surface, a printing part 11 that prints and outputs the

data received based on the setup of the setup part 10, and a

control part 12 that controls each of these parts.

[0013] The control part 12 confirms a connectable state of the

access part 8 and the other party facsimile device, reads out

the data in an alternate fashion from the transmission data

memory parts 3 and 4 for each page during the transmission,

transmits them to the other party from the transmission part 5,

reads out the data from the received data memory part 7 during

the reception, and prints them on the printing part 11 in a

state of any of both surfaces and one surface based on the instruction of the setup part 10.

[0014] Next, the data transmission and reception method in the facsimile device of the present invention is explained referring to Figures 1 and 2.

[0015] Figure 2(a) is a flow chart showing the processing sequence of the control part during the transmission in the facsimile device of the present invention. First, the surface and the back face of an original are respectively read out by the readout parts 1 and 2 (step 1; S1), and whether or not the data to be transmitted exist on both surfaces is decided by the decision part 9 (S2). If the data exist on both surfaces, the data of these both surfaces are discriminated (S3), the data of the surface side are respectively temporarily stored in the transmission data memory part 3, and the data of the back face side are temporarily stored in the transmission data memory part 4 (S4, S5). If the data exist on one surface at S2, whether the data exist on the surface or the back face is decided (S6), and when the data exist on the surface, the data are temporarily stored in the transmission data memory part 4 (S5).

[0016] On the other hand, when the readout of the original is started, the access part 8 has access to the other party facsimile device (S7) and decides whether or not the access is

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possible (S8). Then, if the access is possible, the data stored in the transmission data memory at S4 and S5 are sequentially transmitted to the other party from the transmission part 5 for each page (S9).

[0017] Figure 2(b) is a flow chart showing the processing sequence of the control part during the reception in the facsimile device of the present invention. In case data are received, an access request from the other party is received by the access part (S11), and whether or not the access is possible is decided (S12). If the access is possible, the data from the other party are received by the reception part 6 (S13) and temporarily stored in the received data memory part 7 (S14). Also, if the access is impossible at S12, it is regarded as a line busy, and the processing is finished (S15).

[0018] At S14, whether or not the data storage is finished is decided (S16), a printing mode preset by the setup part 10 by an operation input (S17) is received, and whether or not both surfaces are output is decided (S18). In accordance with the printing mode of any of both surfaces and one surface, the data read out of the received data memory are sequentially printed by the printing part 11 (S19-S21).

[0019]

(Effects of the invention)

As explained above, according to the present invention, as a first effect, since the surface and the back face of a double-faced original are simultaneously read out and transmitted for each page of the surface and the back face, the double-faced original can be directly transmitted. The reason for this is that the readout parts and the transmission data memory parts are respectively installed in accordance with the surface and the back face.

[0020] As a second effect, in case a one-surface original is transmitted, a blank surface is erroneously transmitted. The reason for this is that after deciding whether data exist on the surface or the back face, one-surface pages are read out and /4 transmitted.

[0021] As a third effect, both surfaces or one surface can be optionally selected as the printing mode during the reception. Thus, for example, if a double-faced printing mode is set, it is not necessary to copy both surfaces. The reason for this is that the setup part for setting printing of both surfaces and one surface is installed.

4.   Brief description of the figures

Figure 1 is a block diagram showing an embodiment of the facsimile device of the present invention.

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Figure 2(a) is a flow chart showing the processing sequence of a control part during the transmission in the facsimile device of the present invention.

Figure 2(b) is a flow chart showing the processing sequence of the control part during the reception in the facsimile device of the present invention.

Explanation of numerals:

1, 2 Readout parts

3, 4 Transmission data memory parts

5   Transmission part

6   Reception part

7   Received data memory part

8   Access part

9   Decision part

10   Setup part

11   Printing part

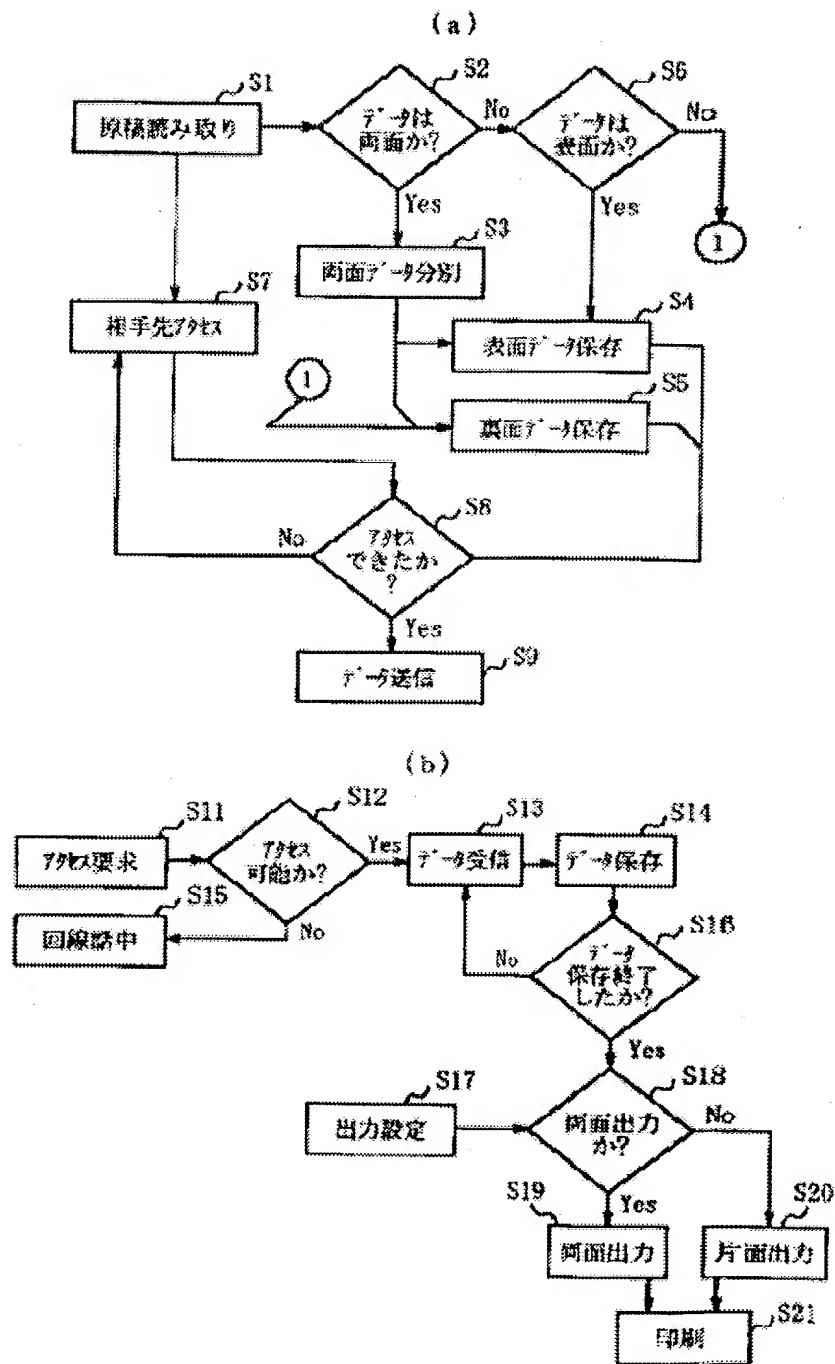12   Control part

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【図1】

【図2】

(a)

(b)

Figure 1:

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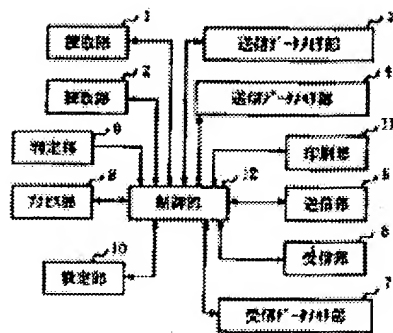
1   Readout part

2   Readout part

3   Transmission data memory part

4   Transmission data memory part

5   Transmission part

6   Reception part

7   Received data memory part

8   Access part

9   Decision part

10   Setup part

11   Printing part

12   Control part

Figure 2:

S1   Readout of an original

S2   Do data exist on both surfaces?

S3   Discrimination of the data of both surface

S4   Storage of the surface data

S5   Storage of the back face data

S6   Do data exist on the surface?

S7   Access to the other party

S8   Is the access possible?

S9   Data transmission

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S11   Access request

S12   Is the access possible?

S13   Data transmission

S14   Data storage

S15   Line busy

S16   Is the data storage finished?

S17   Output setup

S18   Are both surfaces output?

S19   Output of both surfaces

S20   Output of one surface

S21   Printing